Access Control Technology

ACTpro 1500

Single Door IP Controller

Operating & Installation Instructions

18-00079 Issue 1

This manual refers to the ACTpro 1500 a TCP/IP based control unit supporting up to 32 doors.

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1.0 Introduction

1.1 System Overview

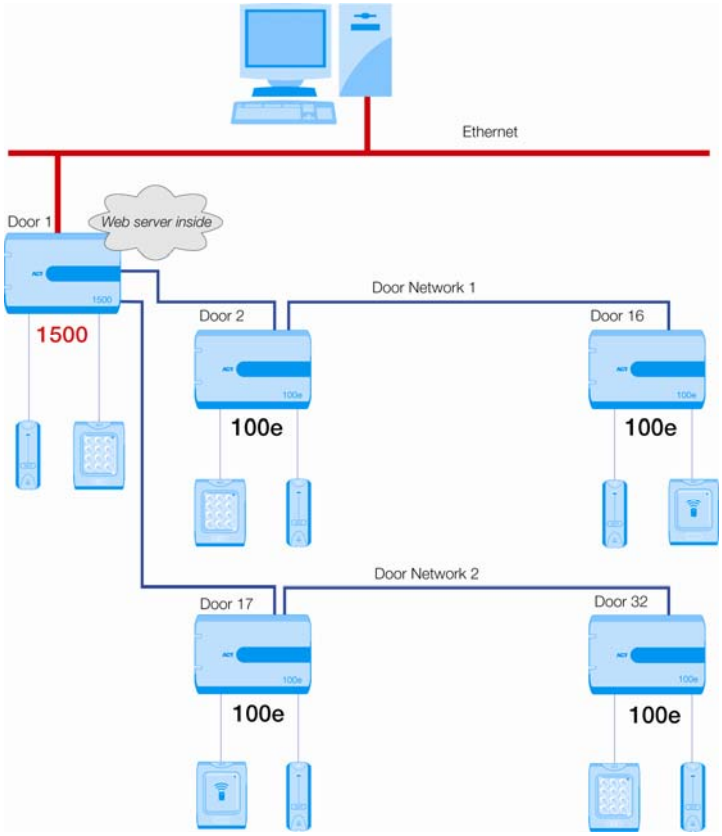
ACTpro 1500 is a single door IP controller which can be expanded to 32 doors with ACTpro 100e door stations.

ACTpro 1500 Controller is **NOT** interoperable with other ACTpro controllers.

ACTpro 1500 controller includes a web server which allows installers and users to manage installations without requiring ACTWin software.

If using more than one 1500 controller ACTWin software is required.

Diagram 1: ACTpro 1500 Controller

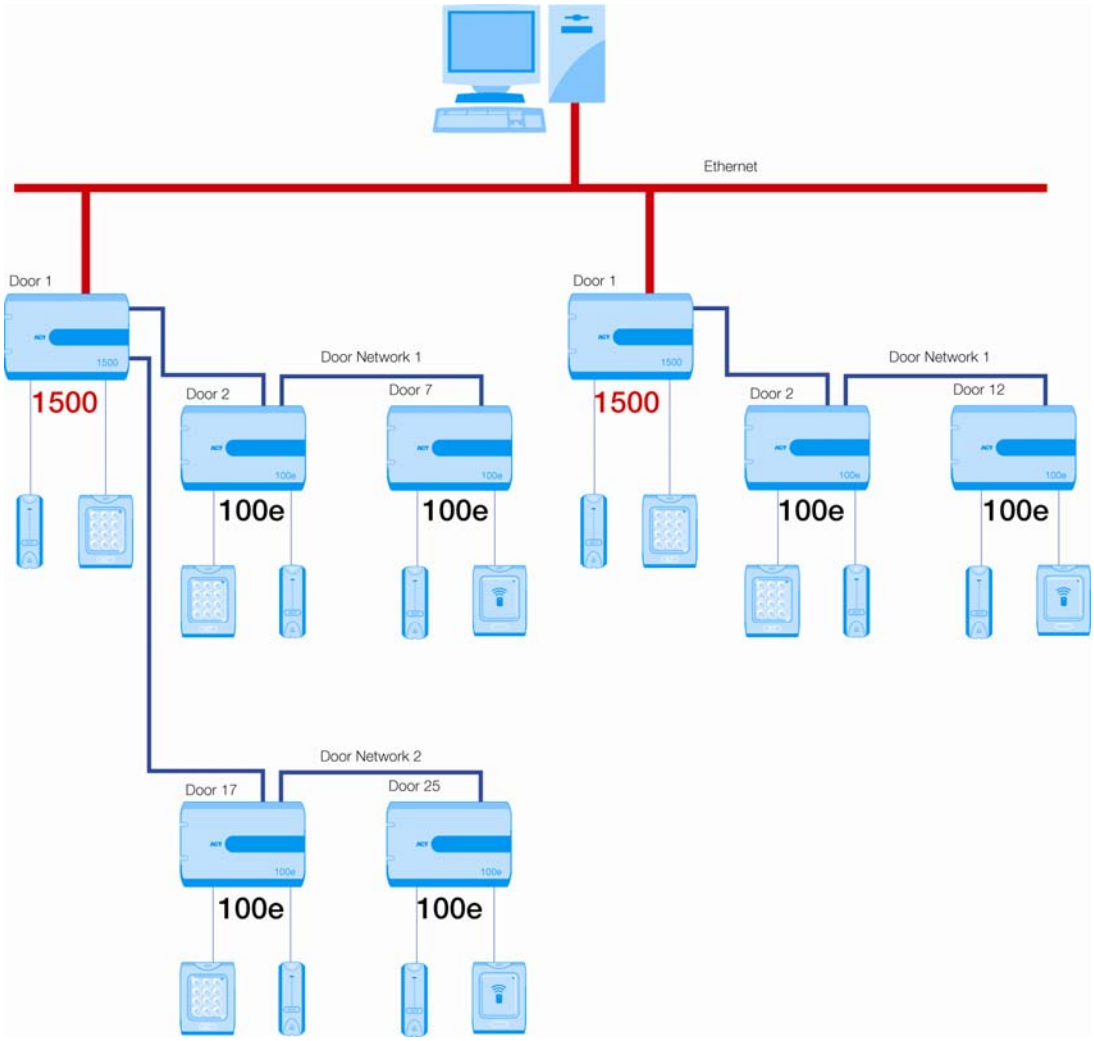


Cable Chart

From	To	Network Type	Cable Type*	Max Distance
ACTpro 1500	PC	Ethernet or USB	CAT5 or mini USB	100m or 5m
ACTpro 1500	ACTpro 100	RS485	Shielded and twisted single pair cable - Belden 9501 or equivalent.	1.4Km
ACTpro 1500 & 100	Readers	ACT protocol	8 Core Screen	100m

Diagram 2: illustrates two ACTpro 1500 controllers managing 28 doors (maximum is 32 doors). With more than one ACTpro 1500 controller ACTWin software required.

Diagram 2: Multiple ACTpro 1500 Controllers



Cable Chart

From	To	Network Type	Cable Type*	Max Distance
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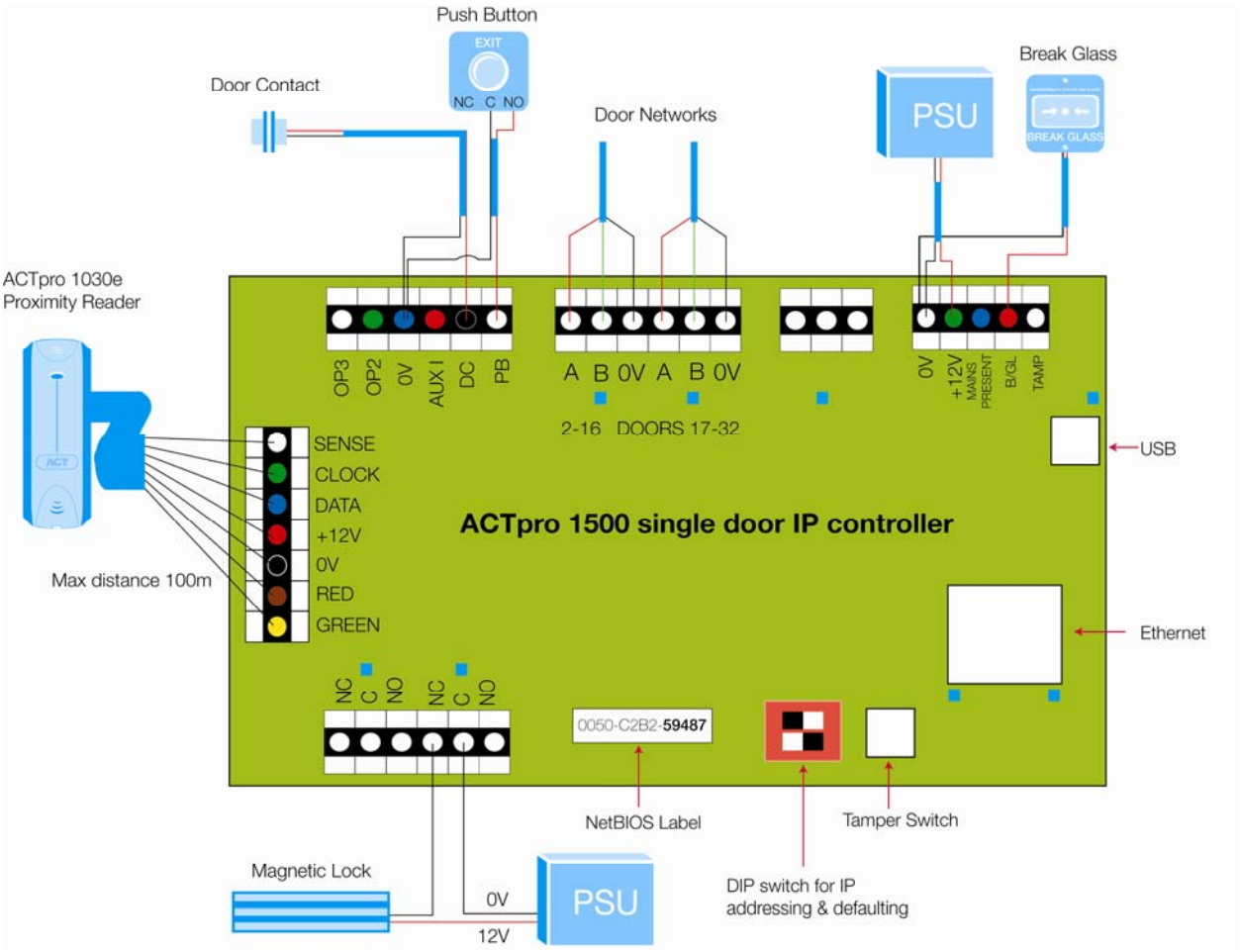
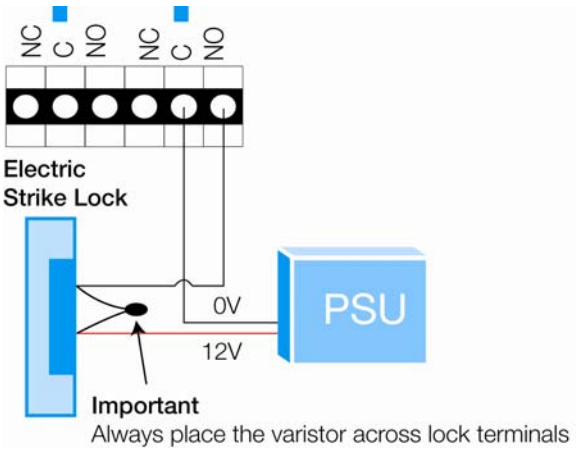
ACTpro 1500	ACTpro 100	RS485	Shielded and twisted single pair cable - Belden 9501 or equivalent.	1.4Km
ACTpro 1500 & 100	Readers	ACT protocol	8 Core Screen	100m

2.0 Installation diagram

2.1 **Diagram 3**: ACTpro 1500 typical wiring



Note: For electric strike lock (de-energized lock) wire between “Common” and “Normally open” pins.



3.0 Quick Setup Guide

Step 1:

Connect ACTpro 1500 to the IP network. Controller is defaulted for dynamic IP address (DHCP). For static (fixed) IP address set DIP switch 1 to the off position (Move DIP switch 1 to the left). Default static IP address is **192.168.1.60**.

Step 2:

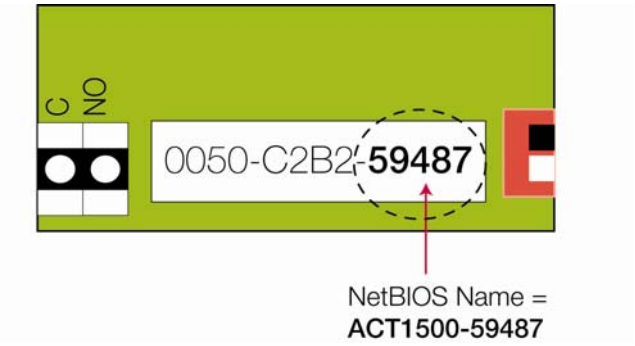
Open your web browser on PC (Microsoft Internet explorer, Firefox)

Step 3:

Enter http://act1500-(**followed by NetBIOS address**).

e.g. http://act1500-**59487** (see label on PCB)

Diagram4: NetBIOS Name



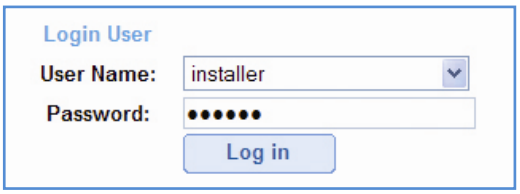
Step 4:

Login to controller as **installer**

Login details:

Username: **installer**

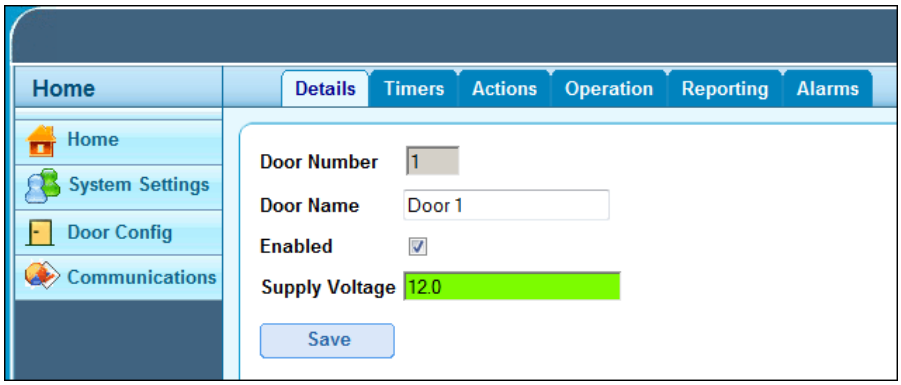
Password: **999999**



Step 5:

Enable Doors

- Select "**Door Config**" menu which lists all 32 doors.
- Select door, check **enable** box and enter a door name.



- Press **Save**

Step 6:

Logout from installer menu (top right corner).

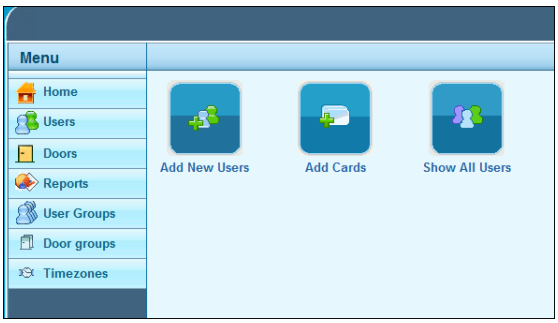
Step 7:

Login to controller as **user**

Login details:

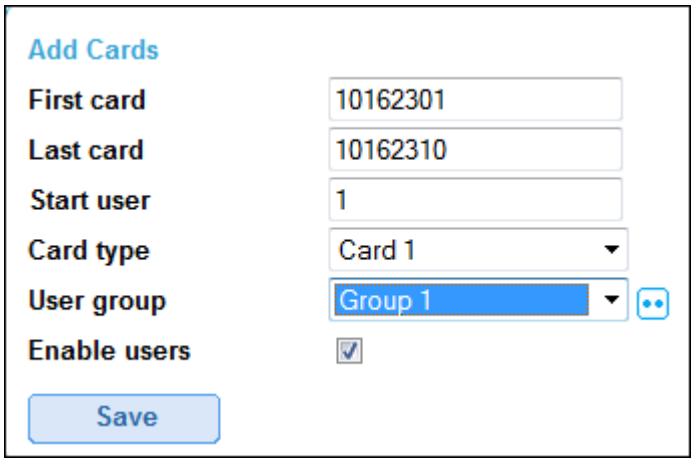
Username: **user**

Password: **123456**



Step 8: Add card batch

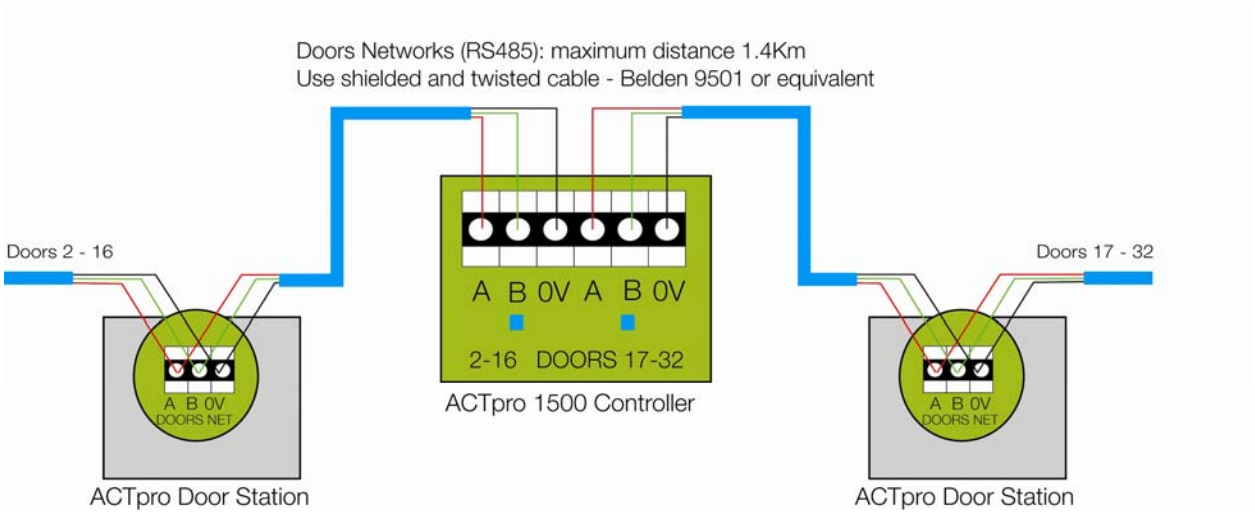
- Select “**Add card batch**” icon from home screen
- Enter
    1. Enter First card number
    2. Enter last card number
    3. Set “Start user” to 1 (for a new installation),
    4. Enable users.
- Press **Save**



4.0 Adding Door Stations

The ACTpro 1500 includes door 1. The controller can be expanded to 32 doors using ACTpro Door Stations.

Diagram 5: Extending ACTpro 1500 controller with ACTpro door stations.


Doors Networks (RS485): maximum distance 1.4Km
Use shielded and twisted cable - Belden 9501 or equivalent
Doors 2 - 16
A B 0V A B 0V
2-16 DOORS 17-32
ACTpro 1500 Controller
Doors 17 - 32
A B 0V
DOORS NET
ACTpro Door Station
A B 0V
DOORS NET
ACTpro Door Station

Doors Network 1 - support doors addressed from 2 to 16, Doors Network 2 support doors addressed from 17 to 32.

The ACTpro door stations on the Doors network must be daisy chained (star configuration not permitted). Maximum length of Doors network should not exceed 1.4km. On Doors network connect A to A; B to B and 0V to 0V.

DIP switch settings**.**

Door Station 2-16 addressing

Required Address	1	2	3	4	5	6	7	8
	ON							
	OFF							
01	*Address 1 Not Required*							
02	OFF	OFF	OFF	OFF	OFF	OFF	ON	OFF
03	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON
04	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF
05	OFF	OFF	OFF	OFF	OFF	ON	OFF	ON
06	OFF	OFF	OFF	OFF	OFF	ON	ON	OFF
07	OFF	OFF	OFF	OFF	OFF	ON	ON	ON
08	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF
09	OFF	OFF	OFF	OFF	ON	OFF	OFF	ON
10	OFF	OFF	OFF	OFF	ON	OFF	ON	OFF
11	OFF	OFF	OFF	OFF	ON	OFF	ON	ON
12	OFF	OFF	OFF	OFF	ON	ON	OFF	OFF
13	OFF	OFF	OFF	OFF	ON	ON	OFF	ON
14	OFF	OFF	OFF	OFF	ON	ON	ON	OFF
15	OFF	OFF	OFF	OFF	ON	ON	ON	ON
16	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF

Door Station 17 - 32 DIP addressing

Required Address	1	2	3	4	5	6	7	8
	ON							
	OFF							
17	OFF	OFF	OFF	ON	OFF	OFF	OFF	ON
18	OFF	OFF	OFF	ON	OFF	OFF	ON	OFF
19	OFF	OFF	OFF	ON	OFF	OFF	ON	ON
20	OFF	OFF	OFF	ON	OFF	ON	OFF	OFF
21	OFF	OFF	OFF	ON	OFF	ON	OFF	ON
22	OFF	OFF	OFF	ON	OFF	ON	ON	OFF
23	OFF	OFF	OFF	ON	OFF	ON	ON	ON
24	OFF	OFF	OFF	ON	ON	OFF	OFF	OFF
25	OFF	OFF	OFF	ON	ON	OFF	OFF	ON
26	OFF	OFF	OFF	ON	ON	OFF	ON	OFF
27	OFF	OFF	OFF	ON	ON	OFF	ON	ON
28	OFF	OFF	OFF	ON	ON	ON	OFF	OFF
29	OFF	OFF	OFF	ON	ON	ON	OFF	ON
30	OFF	OFF	OFF	ON	ON	ON	ON	OFF
31	OFF	OFF	OFF	ON	ON	ON	ON	ON
32	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF

5.0 IP Address Configuration

5.1 Configuring DHCP address

1. Remove power from ACTpro 1500 controller.
2. Set DHCP switch 1 to the on position (Move switch 1 to the right).
3. Reapply power to the ACTpro 1500 controller.

5.2 Configuring Static IP address

1. Remove power from ACTpro 1500 controller.
2. Set DHCP DIP switch 1 to the off position (Move switch 1 to the left).
3. Reapply power to the ACTpro 1500 controller.

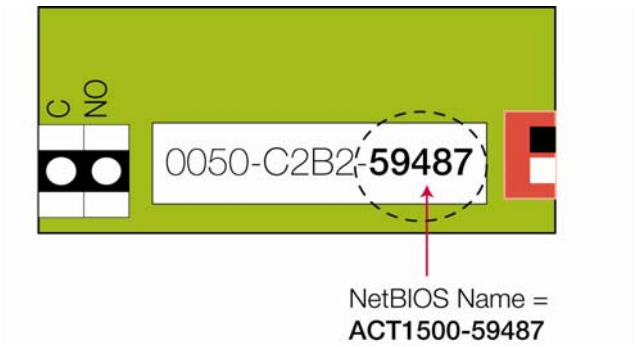
5.3 Changing Static IP address

1. Connect ACTpro 1500 to IP network

2. Open Web browser on PC (use Microsoft Internet explorer or Firefox)

3. Enter http://act1500-(folowed by the NetBIOS address)

Diagram 6 NetBIOS



e.g. http://act1500-**59487** (see label on PCB)

4. **Logon details:**

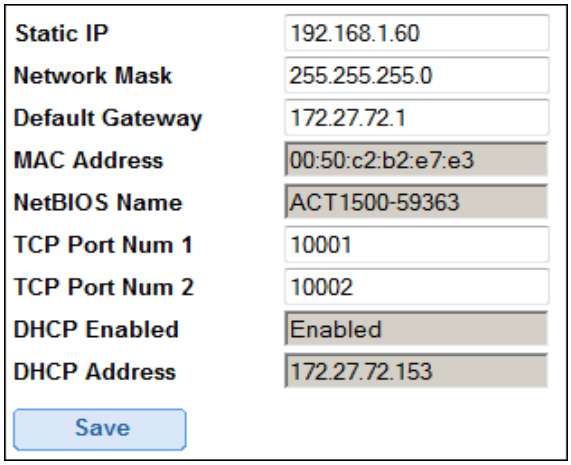
   Username: **installer**

   Password: **999999**

5. Choose Communication menu and set the following
   - Static IP Address
   - Network Mask
   - Default Gateway

   Note: ask the network administrator for the above

6. Press **Save**



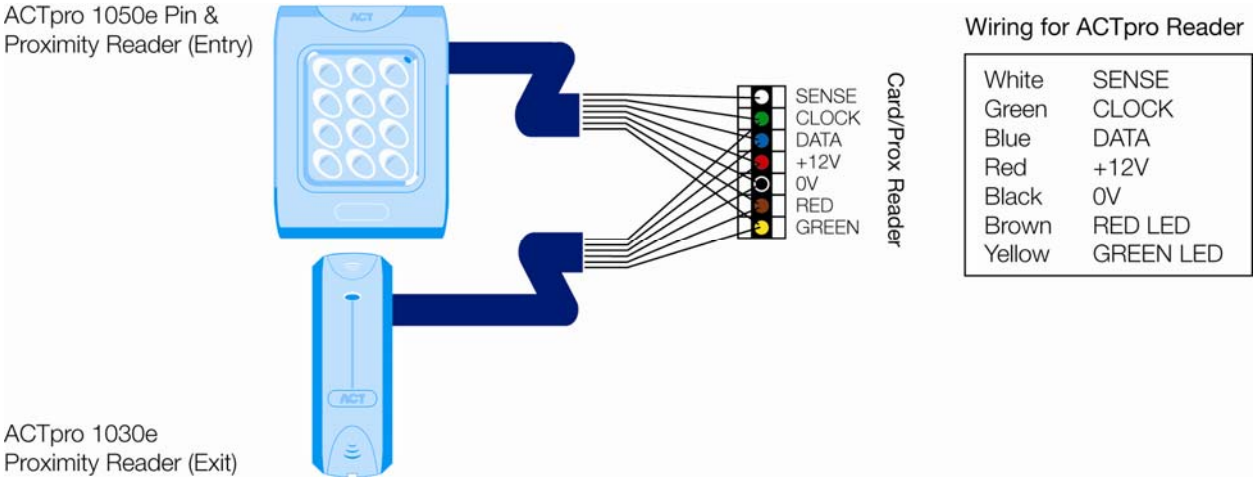
Note: use the new IP address when connecting to the controller.

Quick Setup is now complete.

6.0 Hardware Installation Guide

6.1 Readers

Diagram 7: Wiring of entry & exit readers.



Reader terminal block	Recommended wiring colour	Signal information
SENSE	White	For **Entry readers** connect the reader SENSE cable or terminal to the SENSE input pin. For **Exit readers**, do not use this input.
CLOCK	Green	This is the clock or strobe signal input on the ACTpro 1500. Connect the reader CLOCK cable or terminal on the reader to CLOCK input pin.
DATA	Blue	This is the Data input. Connect the reader DATA cable or terminal on the reader to DATA input pin
+12V	Red	Positive +12V DC Supply voltage for the reader
0V	Black	0V Supply Voltage for the reader.
RED	Brown	Red LED control output from the ACTpro 1500. Connect the reader RED cable or terminal on the reader to RED output pin on the controller
GREEN	Yellow	Green LED control output from the ACTpro 1500. Connect the reader GREEN cable or terminal on the reader to GREEN output pin on the ACTpro controller

6.2 Push Button (PB)

Push button is connected between PB input and 0 Volts. When push button is pressed the main relay is be activated for the configured time.
Diagram 8

Push button is also referred to as Exit Button, Egress Button, Request To Exit.

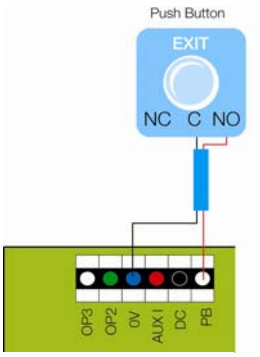


Diagram 8

6.3 Door Contact (DC)

Connect door contact between DC input and 0Volts. Diagram 9

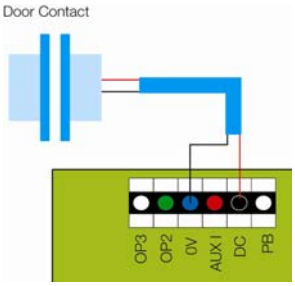
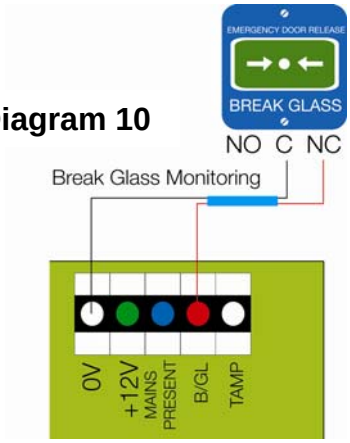


Diagram 9

6.4 Break Glass Monitoring

Connect Normally closed output from the break glass to B/GL input on the controller.
Diagram 10

Diagram 10



Enable break glass reporting

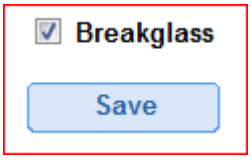
Login to the Controller as Installer.

Select “Door Config” menu option

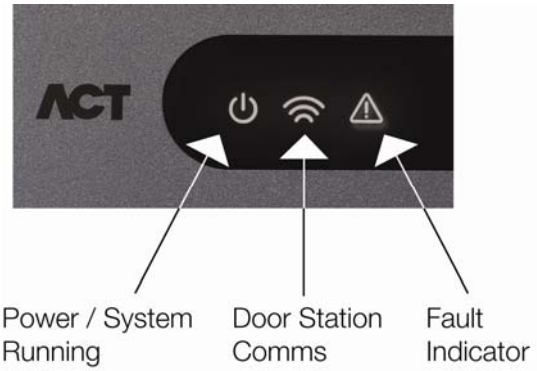
Select door for which break glass monitoring is required.

Under “Operation” tab select Breakglass

Save.



7.0 Controller Status Indicators



Blue: Power

This indicates that the ACTpro 1500 has power.

Blue: Communications

Constant illumination indicates that all enabled door stations are online.

Flashing indicates that one or more door stations are offline.

Red: Fault.

This illuminates to indicate an alarm on the system, possible causes are:

1. Tamper open: ACTpro1500 plastic housing is not closed. In situations where the ACT plastic housing is not being used, connect TAMPER input on the ACTpro1500 PCB to 0V.
2. Break Glass: ACTpro 1500 provides a method to monitor an Emergency break glass switch via the B/GL input. The fault LED will illuminate if the Emergency break glass switch is activated.
3. Mains Fault: ACTpro1500 will accept a mains present signal from a PSU. This is wired into MAINS PRESENT input on the PCB. When the PSU has no mains supply the fault is active.
4. Door Station offline: When one or more enabled door stations is not communicating with the ACTpro 1500 the Fault LED illuminates and the appropriate network communications indicator will flash.
5. Low Supply Voltage: When voltage to the +12V terminal is less than +9V.
6. Fuse Blown: The +12V output on the READER terminals is current limited to provide short circuit protection. The Fault LED will illuminate if too much current is pulled from this connection.

8.0 Controller Configuration

ACTpro 1500 has two built-in user accounts, **installer** & **user**.

Installer account: is used to configure global communication and door settings.

Installer login details:

Username	Password
installer	999999

User account: is used for day to day management of the system, such as manage users and access rights.

User login details:

Username	Password
user	123456

8.1 Connecting PC to ACTpro 1500 Controller

Dynamic IP address:

Step1: Connect ACTpro 1500 to IP network. The 1500 Controller is defaulted for dynamic IP address (DHCP). For static (fixed) IP address set DIP switch 1 to the off position (Move DIP switch 1 to the left).

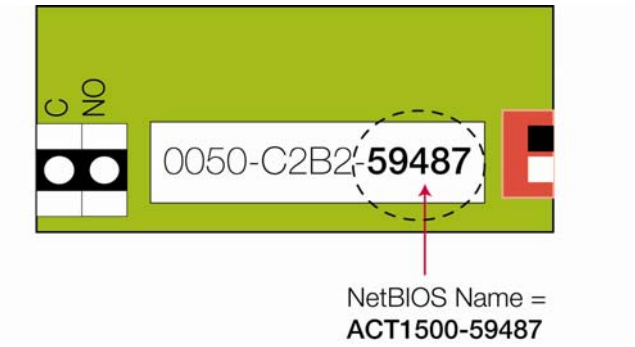
The Default static IP address is **192.168.1.60**.

Step2: Open Web browser on PC (Microsoft Internet explorer, Firefox)

Step3: Enter http://act1500-**(folowed by the NetBIOS address**)

e.g. http://act1500-**59487** (see label on PCB)

Diagram 11: NetBIOS name



Static IP address:

If the ACTpro 1500 controller does not have access to a DHCP server, configure ACTpro 1500 controller to use static IP address (see section 5).

Step 1: Configure the PC with IP address 192.168.1.61 for example

Default static IP address setting

Default Static IP address: **192.168.1.60**

Default Gateway: **192.168.1.1**

Default Netmask: **255.255.255.0**

Step 2: Connect to the 1500 Controller.

Step 3: Open Web browser on PC (Microsoft Internet explorer, Firefox)

Step 4: Enter http://192.168.1.61

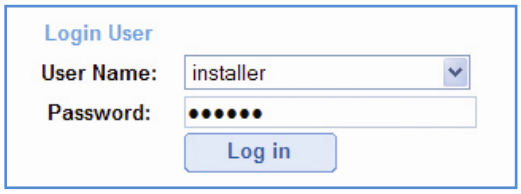
8.2 Change Installer Password

Login to the controller as installer

Login details:

Username: **installer**

Password: **999999**



Change installer password

Step 1: Login in as “installer”

Step 2: Go to the “**settings**” link (top–right of screen)

Step 3: Select “**PIN code**” tab

Step 4: Enter new 6 digit code

Step 5: Save

8.3 Change User Password

Login to the controller as user

Login details:

Username: **user**

Password: **123456**

Change user password

Step 1: Login as “user”

Step 2: Go to the “**settings**” link (top–right of screen)

Step 3: Select “**PIN code**” tab

Step 4: Enter new 6 digit code

Step 5: Save

Warning: It’s important that the passwords for “installer” and “user” are different and retained in a safe location as the passwords cannot be retrieved. If either code is lost a factory default will be required.

8.4 Set controller Date and Time

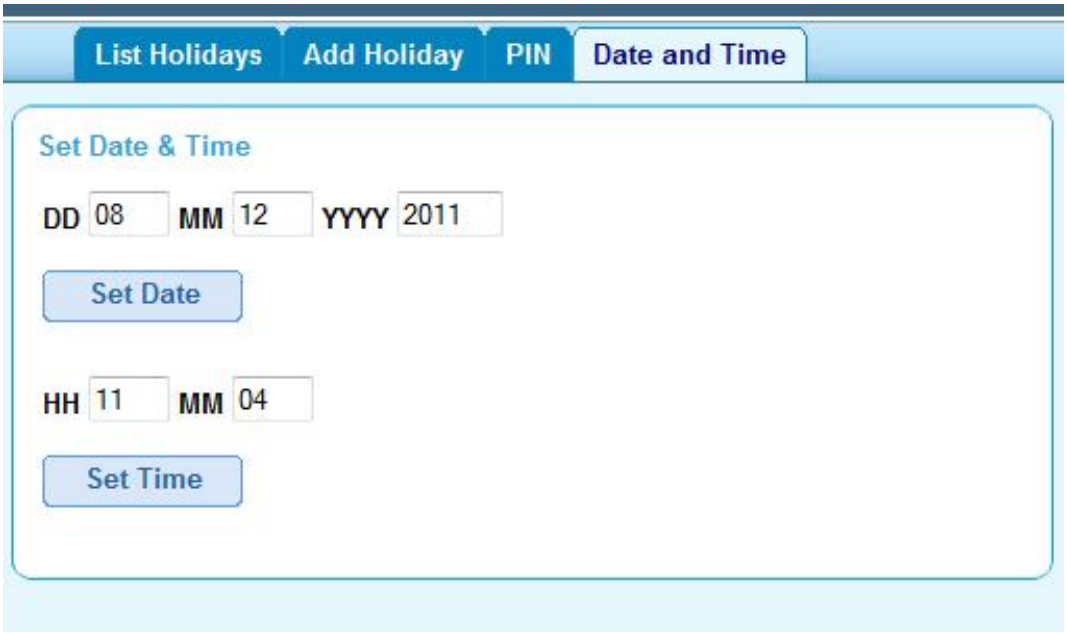
Step 1: Login under the **user** account

Step 2: Select **setting** option (top-right of screen)

Step 3: Select “Date and Time” tab.

Step 4: Enter correct date and time

Step 5: Set Date or **Set Time**



9.0 Door settings:

9.1 Enable and name doors

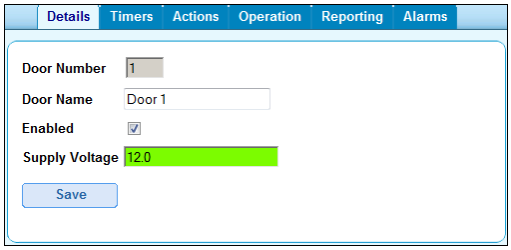
Step 1: login as installer

Step 2: Select "**Door Config**" menu option

Step 3: Select desired door

Step 4: Enable and name door

Step 6: Save



9.2 Set Door Relay Timers

Step 1: login in as installer

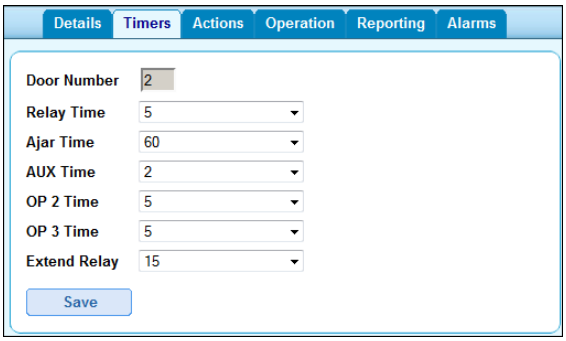
Step 2: Select "**Door Config**" menu option

Step 3: Select desired door

Step 4: Select "**Timers"** tab

Step 5: Enter new time.

Step 6: Save



9.3 Set Door Timed Actions

Step 1: login in as installer

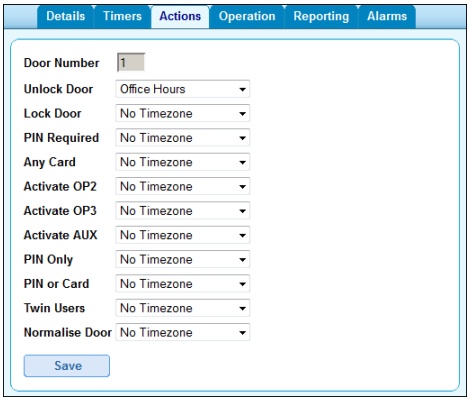
Step 2: Select "**Door Config**" menu option

Step 3: Select desired door

Step 4: Select "**Actions"** tab

Step 5: Select timezone against the action.

Step 6: Save



10.0 User settings

10.1 Add a batch of cards

Step 1: Select "**Add card**" icon from the home screen

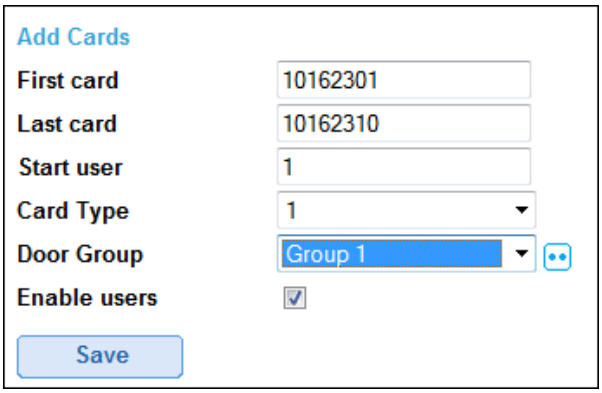
Step 2: Enter First card number

Step 3: Enter Last card number

Step 4: Set Start user to 1 (for a new installation)

Step 5: Check "**Enable users**"

Step 6: Save



10.2 Add individual Users

Step 1: Select "**Users**" from the menu

Step 2: Select an unassigned user from the list

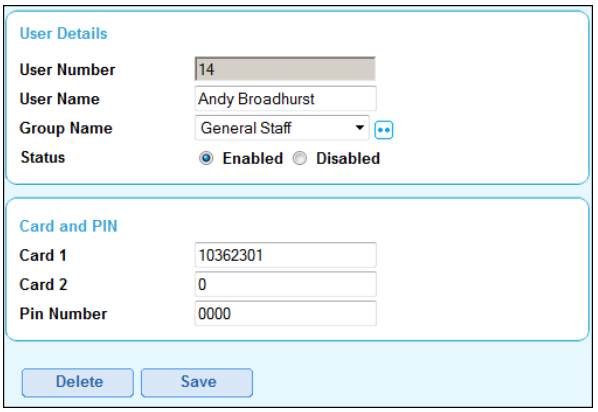
Step 3: Enter User name

Step 4: Select user group

Step 5: Check "**Enable" user**

Step 6: Enter card number into either Card 1 or Card 2 field

Step 7: Save



11.0 Access Rights

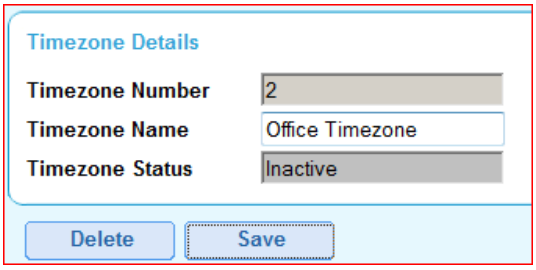
To create access rights a user group must be created. A user group consist of two elements

1. Time zones,
2. Door groups

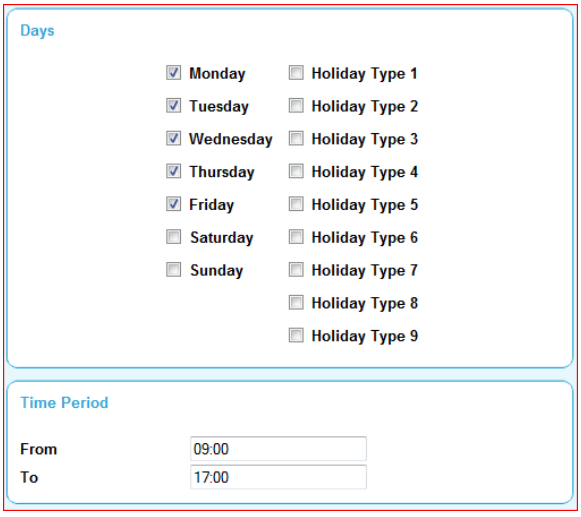
11.1 Create a Time zone

To create a **Time zone**, login as "**user**" and go to "Timezones" menu and select a time zone.

- Choose a time zone
- Assign a unique name to the Timezone



- Select time period tab
- Enter time period
- Save changes

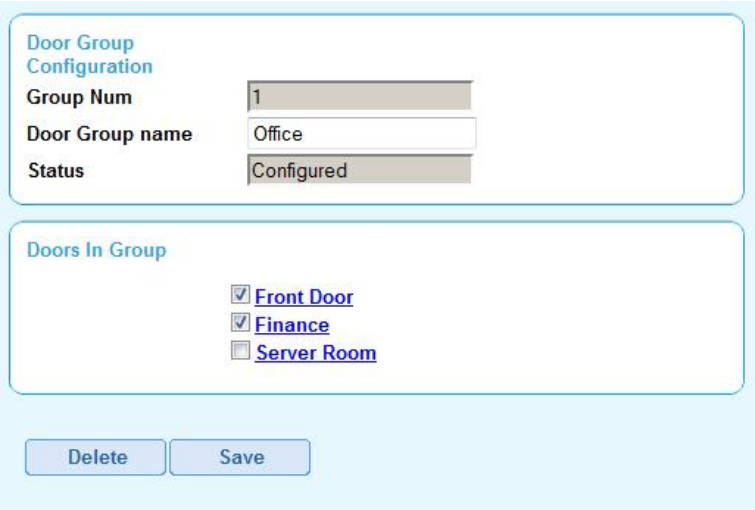


11.2 Create a door group

To create a door group,

1. login as “user”
2. Select “**Door Groups**” menu
3. Select available Door Group.

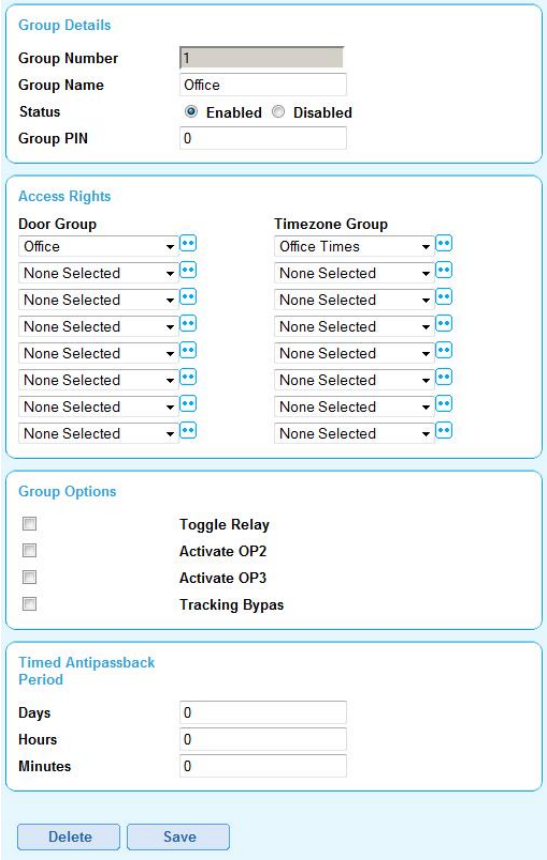
- Assign a unique name to the door group
- Assign doors to doorgroup
- Save changes



11.3 Create a User group.

Select “User Groups” menu and choose available user group

- Assign a unique name to the user group (e.g. Finance department, Cleaners)
- Enable user group
- Assign door group and Time zone
- Save changes



11.4 Assign a user group to a user.

- Select “Users” from the menu and choose select the appropriate user.
- Assign user group from the dropdown list.
- Save Changes

12.0 Installing ACTWin

ACTpro 1500 can be configured and managed by ACTWin software.

ACTWin must be used on sites with more than one ACTpro 1500.

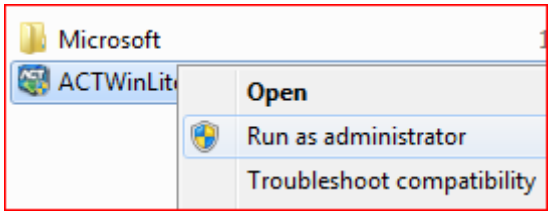
Before installing ACTWin software ensure the user account has sufficient rights to install applications.

1. **Download and extract the setup program**

ACTWin lite software can be downloaded from the resource centre on the Access Control Technology web site http://www.accesscontrol.ie;

2. **Installing ACTWin**

For Windows 7 or Vista right click on ACTWinLite2.8B5Setup.exe file and select "**run as administrator"** then follow the on-screen instructions to complete the installation.



For Windows XP right click on ACTWinLite2.8B5Setup.exe file and select **run** then follow the on-screen instructions to complete the installation; make sure the logged on user has sufficient rights to install application.

ACTWin software is compatible with the following operating systems

Operating System\ACTWin	ACTWin Lite	ACTWin Pro
Microsoft Windows XP pro - 32 Bit	Yes	Yes
Microsoft Vista pro - 32 & 64 bit	Yes	Yes
Microsoft Windows 7 pro - 32 & 64 bit	Yes	Yes
Microsoft 2003 Server professional - 32 & 64 bit	Yes	Yes
Microsoft 2008 Server professional - 32 & 64 bit	Yes	Yes

13.0 Run ACTWin for the first time.

ACTWin software can be run from the icon on the desk top or from "**Start->All Programs->Access Control Technologies->ACTWin Lite 2.8"** and select **ACTWin Lite.**

For Microsoft Windows 7 or Vista ensure the application is run as administrator, by right clicking on the ACTWin icon and select "**run as administrator**"**.**

Once the ACTWin software is launched define the folders where the database, backup files and log files will be stored.

> From the "**View->Options**" menu select the "**Directories"** Tab. From the drop down box select the "**Database Files**", "**Database back-ups**" and "**Log Files**" and browse to the appropriate directories.
>
> Press the OK Button to accept the changes and exit the screen.
>
> Note: if the browse button is greyed out it's an indication that the software has not been run as administrator.

Configure the software to open the last opened database and download names to the controller

Open last opened database

> From the "**View->Options**" menu select the "**Program Settings"** Tab.
>
> Enable "**Auto Load-load last opened database"**
>
> Press OK to accept the changes and exit the screen.

Download names to the controller.

> From the "**View->Options**" menu select the "**Database Settings"** Tab.
>
> Enable "**Download names**"
>
> Press OK to accept the changes and exit the screen.

14.0 Create a new Database

Select “**File->New->Create”** from ACTWin menu.

Enter an appropriate database name such as “CustomernameAccessDB” and press the Save button.

Installation Wizard:

Step-1 next

Step-2 Select **ACTpro 1500** controller and the number of doors installed or to be installed. Press **next**

Step-3 Select TCP/IP and enter the controller IP address; if using a USB cable then select USB. Press **next**

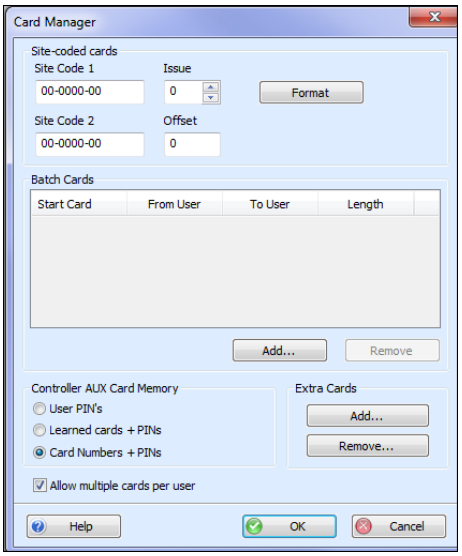
Step-4 Finish.

Step-5 Card Manager:

Select “Card Number + PINs”

Enable “Allow Multiple cards per user”

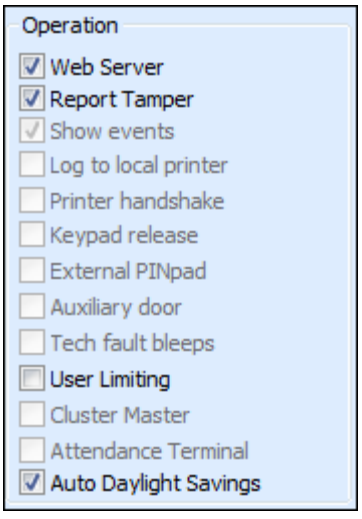
Press OK.



Note:

When first installed ACTWin disables the webserver on the 1500 controller. To re-enable the Web Server feature,

- Choose the controller **Database->Controller**
- Enable the Web Server in the Operation section
- Save (Record->Accept)



15.0 Connect to 1500 Controller

Select “**File->New->Create”** from ACTWin menu.

Connect to the controller “**File->Connect”** from the menu.

Uploading from ACTpro 1500 Controller

If the ACTpro 1500 controller has previously been configured using the web browser.

- File->Upload menu
- Enter Installer password - default is 999999

16.0 Backup/Restore

Caution: Before commencing firmware upgrades or undertaking any major change make sure to perform a full system backup Tools->Database->Backup

Manual Backup

Select Tools->Database->Backup; a backup is created in the backup directory.

Timed backup

1. Select View->Options menu; select “Program Settings” Tab.
2. Enable “Auto-backup database every day at”
3. Set the time of the backup,
4. Press “OK” to accept the changes and exit the screen.

ACTWin will automatically create a backup of the database at the defined time

Restore a database,

1. Disconnect from controller “File->Disconnect”
2. Select the restore “Tools->Database->Restore”
3. Select backup file.

17.0 Upgrading Firmware

ACTWin must be installed and connected to the controller.

Contact ACT help desk prior to the installation for firmware password.

Caution: Before upgrade ensure to perform full backup. “**Tools->Database->Backup”**

To perform the firmware upgrade,

Step1: connect to controller **File->Connect**,

Step2: Select controller from **“Database->Controllers”**.

Step3: Select “Upgrade” and follow on-screen instructions to complete the upgrade.

ACT Contact Details

Tel: +353-1-4662570

UK LoCall: 0845 300 5204

Web: www.accesscontrol.ie

E-mail: tech@accesscontrol.ie

18.0 Troubleshooting

18.1 Unknown Card

The card has not been assigned on the system.

18.2 Access Denied

Make sure the User is enabled and has appropriate access rights.

18.3 Door Offline

Ensure Door is enabled

Ensure correct address is assigned to the Door Station, using DIP switches.

Ensure the doors network is in a daisy chain wiring configuration.

Defaulting the Door Station

1. Disconnect Power
2. Set all DIP switch of Off
3. Reapply power
4. Wait approximately 3 seconds, until the door station confirms default completed by sounding the buzzer
5. Set the DIP switch to the desired address.

18.4 Cannot Connect to Controller

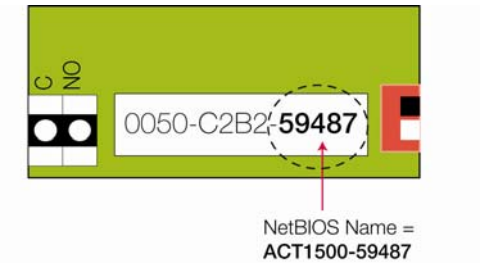
Step 1: On the 1500 Controller PCB check the Green LINK LED (beside Ethernet jack) is active; if inactive check the network point is connected to a switch.

Step 2: Ensure IP address has been set correctly (see section 5 for IP Address Configuration).

Step 3: Ping the ACT1500 Controller using

- NetBIOS name e.g. “ping act1500-59487”
- IP address e.g. “ping 192.168.1.60”

Use the last 5 digits from the NetBIOS label on the PCB as illustrated.



If the problem is not resolved contact the IT department as there may be a problem with the network.

19.0 Product Specification

Features:	
Controls up to 32 doors	
Built-in web server (only for use with single ACTpro 1500)	
DHCP / Static IP addresses	
Voltage monitoring	
Break glass monitoring	
NetBIOS name	
Status LED's	
Space for cable management	
Entry & exit readers	
Reader short circuit protection	
Anti-passback	
Interlocking	
USB connection for ACTWin software	
TCP/IP connection for ACTWin software or Web Browser	
Capabilities	
Number of doors	1 (expandable to maximum of 32)
Number of Users	15,000 (2 credentials per user)
User Groups	250
Time Zones	250
Door Groups	250
Log Events	5000
Browser Compatibility	Microsoft Internet Explorer 8 or 9, Firefox Version 8.0
Technical Details:	
Voltage Range:	12VDC
Current Consumption (Max):	250mA
Dimensions:	235mm x 165mm x 55mm
Weight:	455g
Relay contacting rating	Main relay 5A / 50 Vac, AUX relay 1A / 50 Vac
Operating temperature	-10 to +50 degrees C
Indoor use only	

Ordering Information:

ACT Product Code	Product description
Controller	
ACTpro 1500	Single door IP controller expandable to 32 doors with ACTpro door stations
ACTpro 100e	Single door station
Readers	
ACTpro 1030e	ACT RFID slimline, proximity reader, IP67
ACTpro 1040e	ACT RFID Surface / Flush, proximity reader, IP67 rated
ACTpro 1050e	ACT RFID Surface/ Flush, PIN & proximity reader, IP67
ACTpro 1060e	ACT PIN only reader
ACTpro-X 1030PM	Panel mount multi-format proximity reader, IP67
ACTpro 1030e VR	Vandal Resistant cover for the ACTpro 1030e
Cards and Fobs	
ACT RFID ISO-B	ACT Batch Cards
ACT RFID FOB-B	ACT Batch Fobs
Software	
ACTWin pro	PC application software
Communications	
ACT USB Mini 5m	5M mini USB cable

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